

GEM related activities at CAPP/IBS

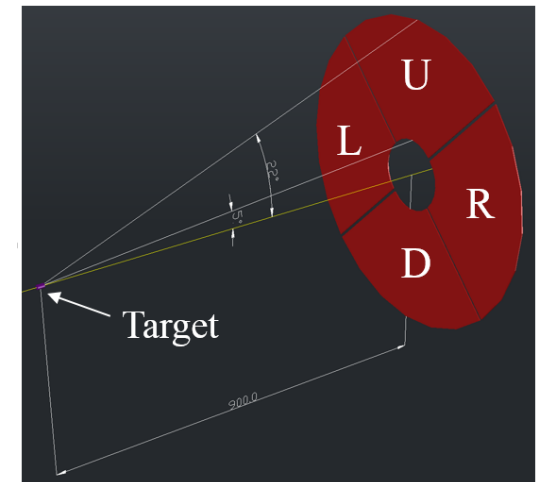
Seongtae Park

*Center for Axion and Precision Physics(CAPP)
Institute for Basic Science, South Korea*

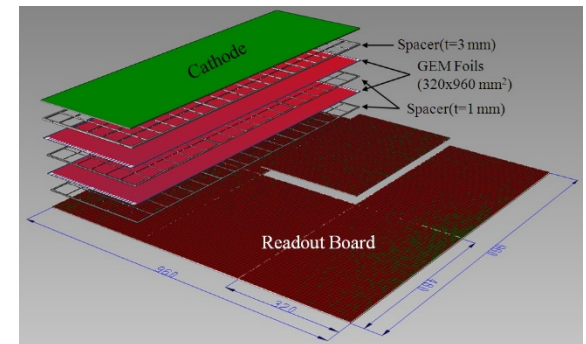
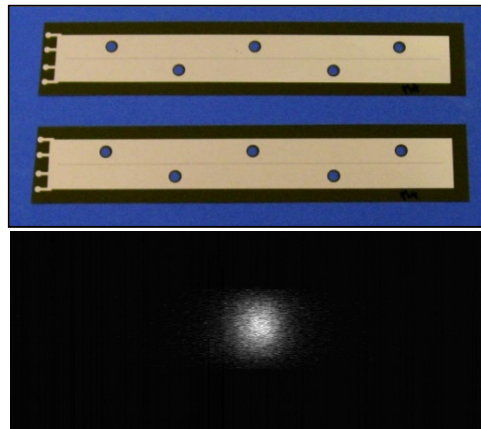
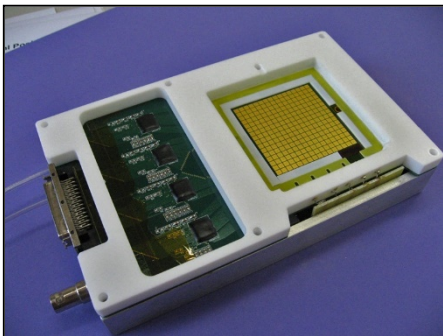
**RD51 collaboration meeting
VECC-SINP, Kolkata, India (Oct. 27~31, 2014)**

- I have been RD51 member since 2008 as a member of UTA
- Recently, I moved to IBS(Institute for Basic Science, Daejeon, Korea) and working for CAPP(Center for Axion and Precision Physics)
- In this group, I'm working on 'storage ring proton EDM experiment (SREDM) and developing GEM-based polarimeter detector
- I want to keep my RD51 membership with my new institute.

- Searching for permanent electric dipole moment
→ proof of strong CP violation
- Using all electrical ring to store polarized proton beam
- This is a new proposal and the best candidate of the storage ring is BNL(Alternating Gradient Synchrotron, AGS ring)
- Detection of proton polarization is carried out by scattering the protons on carbon nuclei
- From the scattering, we measure asymmetry of proton hits on L/R or U/D detectors
- **We propose GEM detector as the polarimeter detectors for pEDM search**



- GEM-based x-ray digital imaging device
 - ✓ Single channel readout electronics/DAQ software development
 - ✓ Multichannel readout electronics/DAQ software development(VA_SCM3) ASIC)
- GEM-based digital hadron calorimeter development for ILC
- GEM chamber design, construction and test
- GEM foil design
- GEM foil design and production using Nd-YAG laser drill
- Etc.



We CAPP/IBS want to become a new member of RD51 as a new institute. Please kindly accept us.

Thank you.